

Measuring Change in Psychotherapy Using the
MMPI-2 and the Holt Measure of Primary Process Manifestation

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ABSTRACT

This study examined personality change in subjects after Long Term Psychodynamic Psychotherapy (LTPP), defined as 10 months or longer of continuous therapy, at a university outpatient Psychological Clinic. Assessment measures used were the MMPI-2 and the Holt Measure of Primary Process Manifestation. An archival search of patient records over 7 years was conducted for files that included 1) adults 18 years or older, 2) attended therapy for at least 10 consecutive months or longer and 3) contained 2 completed MMPI-2 tests and/or 2 completed Rorschach Inkblot Tests. The sample included 17 patient files with 1 set of tests given as part of the initial psychological evaluation (Time 1) and the 2nd test completed after at least 10 months of continuous therapy or prior to the termination of therapy as per the therapist's discretion (Time 2). Results were analyzed using paired *t*-tests to compare sample means and Bonferroni correction applied to reduce probability of obtaining a Type I error. Significant differences from Time 1 of testing to Time 2 of testing were reported on the MMPI-2 Clinical scales Hypochondriasis (*Hs*), Depression (*D*), Hysteria (*Hy*), and Psychastenia (*Pt*). No significant differences were reported on the Holt Measure of Primary Process Manifestation. Previous research on personality change following long term psychodynamic therapy was supported using the MMPI/MMPI-2 and Intrapsychic or Structural Change issues were discussed.

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CHAPTER 1

REVIEW OF THE LITERATURE

Introduction

Empirically Supported Treatments (ESTs) or Empirically Validated Treatments (EVTs) and the research methods used to validate them have a number of common characteristics. Treatments are typically designed for a single Axis I disorder with patients screened to maximize the homogeneity of diagnosis and minimize the co-occurring conditions. The treatments are manualized and usually of a prescribed period of time. The experimenter randomly assigns patients to treatments or to control conditions. Assessment focuses primarily on the symptom that is the focus of the study. This type of experiment is known as an efficacy study and used primarily to determine the empirical validity of a psychological treatment (Chambliss & Hollon, 1998; Chambless & Ollendick, 2000; Westen, Novotny, & Thompson-Brenner, 2004).

Results from these types of studies have led to recommendations for best practices i.e., specific treatments for specific disorders, based on criteria proposed by a variety of scientific committees. Utilizing the same research methodology to evaluate long term psychodynamic psychotherapy may result in the mistaken impression that Long Term Psychodynamic Psychotherapy (LTPP) is not effective or inert.

Effectiveness of Long Term Psychodynamic Psychotherapy (LTPP)

The effectiveness of Long Term Psychodynamic Psychotherapy has been demonstrated in several recent meta-analyses (de Maat, de Jonghe, de Kraker, Leichsenring, Abbass, Lutyen, et

al., 2013; de Maat, de Jonge, Schoevers, & Dekker, 2009; de Maat, Philipszoon, Schoevers, Dekker, & de Jonge, 2007; Leichsenring, Abbass, Luyten, Hilsenroth, & Rabung, 2013; Leichsenring & Rabung, 2008, 2011). In a study reported in the *Harvard Review of Psychiatry*, (de Maat et al., 2009) examined the effectiveness of long term psychodynamic psychotherapy across a range of pathologies and DSM diagnoses. The meta-analysis of 27 studies with a total of 5,063 adults receiving outpatient long term psychodynamic therapy, defined as treatment lasting a minimum of one year and involving at least 50 sessions, reviewed symptom improvement and change in personality pathology. The results indicate not only the effectiveness of LTPP for symptom reduction and personality change across various levels of pathology, but continued improvement as measured at follow up periods from 3 to 5 years post-treatment (de Maat et al., 2009).

In another meta-analysis, results reported in the *Journal of the American Medical Association* (Leichsenring & Rabung, 2008) suggest that LTPP was significantly superior to shorter term methods of psychotherapy for patients with personality disorders, multiple mental disorders, and chronic mental disorders. The meta-analysis of 23 studies involving a total of 1053 patients concluded that patients continued to improve in all five domains assessed in the study (overall effectiveness, target problems, psychiatric symptoms, personality functioning, and social functioning) an average of 23 months post-treatment. Overall outcome indicates that after treatment with LTPP, the patients on average were better off than 96% of the patients in the comparison groups (Leichsenring & Rabung, 2008).

Leichsenring and Rabung (2011) updated their 2008 meta-analysis based on methodological criticism received i.e., heterogeneous patient population, possible publication

bias, and inclusion of inactive control conditions. Their 2011 meta-analysis confirmed their original conclusion that LTPP is superior to less intense forms of psychotherapy in complex mental disorders. Leichsenring and Rabung reported a between-group effect size of .54 in overall outcome indicating that after treatment with LTPP, patients on average were better off than 70% of the patients treated in the comparison groups. Their results also found a positive correlation between outcome and duration or dosage of therapy (Leichsenring & Rabung, 2011).

Recent meta-analyses support the growing body of evidence from randomized controlled trials (RCTs) for the efficacy of Long Term Psychodynamic Psychotherapy in specific mental disorders (Abbass, Hancock, Henderson, & Kisley, 2004, 2006; Gerber et al., 2011; Leichsenring, 2009; Leichsenring & Rabung, 2008, 2011). Several follow-up studies utilizing a pre-post research design have suggested substantial improvements in patients treated with LTPP for personality disorders (Bond & Perry, 2004; Hoglend, 1993; Leichsenring & Leibing, 2003; Monsen, Odland, Faugli, & Eilersten, 1995a; Monsen, Odland, Faugli, & Eilersten, 1995b; Perry, Banon, & Ianni, 1999; Stevenson & Meares, 1992, 1995).

Enduring Benefits of Long-Term Psychodynamic Therapy (LTPP)

The benefits of psychodynamic psychotherapy increase in long term follow-up suggesting the treatment brings structural change enabling delayed and continued gains. This finding has been reported in independent meta-analyses (Abbass et al., 2006; Anderson & Lambert, 1995; de Maat et al., 2009, 2013; Leichsenring & Rabung, 2008, 2011; Leichsenring, Rabung, & Leibing, 2004; Town, Diener, Abbass, Leichsenring, Driessen, & Rabung, 2012).

Bateman and Fonagy (2001) reported patients that received psychodynamic treatment for 18 months showed significantly more improvement in depressive symptoms, social and interpersonal functioning, need for hospitalization, and suicidal and self-mutilating behavior than a control group receiving standard psychiatric care. These improvements in functioning were maintained during an 18 month post-treatment follow-up period with assessments every 6 months (Bateman & Fonagy, 2001; Gabbard, Gunderson, & Fonagy, 2002).

A study of patients with borderline personality disorder (Clarkin, Levy, Lenzenweger, & Kernberg, 2007) not only demonstrated treatment benefits that equaled or exceeded those of an evidence based treatment, Dialectical Behavior Therapy (Linehan, 1993). It also showed changes in underlying psychological mechanisms or intrapsychic processes believed to mediate symptom change in borderline patients. These intrapsychic processes include changes in reflective functioning as well as attachment organization (Levy, Meehan, et al., 2006). The intrapsychic changes occurred in patients who received psychodynamic psychotherapy but not in patients who received dialectical behavior therapy. These intrapsychic changes may account for the long term treatment benefits patients receive (Levy, Meehan, et al., 2006; Shedler, 2010).

Bateman and Fonagy's (2008) study supports the theory of intrapsychic change within patients as a result of long term psychodynamic psychotherapy. They reported enduring benefits of psychodynamic therapy 5 years after treatment completion and 8 years after treatment initiation. At 5 year follow up, 87% of patients who received "treatment as usual" continued to meet diagnostic criteria for borderline personality disorder, compared with 13% of patients who received psychodynamic psychotherapy (Bateman & Fonagy, 2008).

Long-Term Psychodynamic/Psychoanalytic Psychotherapy Studies in Europe

Germany.

The Gottingen study, a naturalistic study of the effectiveness of psychoanalytic and psychodynamic therapy reported significant reduction of symptoms and interpersonal problems in outpatients suffering from depressive, anxiety, obsessive-compulsive, somatoform, and personality disorders. The outcome data represents a sample of 36 patients that were treated with psychodynamic or psychoanalytic therapy for a mean of 37.4 months and a mean of 253 sessions. The effects of the long-term psychotherapy were assessed by pre-post and pre-follow up comparisons (Leichsenring, Biskup, Kreische, & Staats, 2005; Leichsenring et al., 2008).

In addition to significant improvements in symptoms and interpersonal problems, improvements in the quality of life, well-being, and in the target problems were found. The effect sizes for all outcome measures were large between 1.28 and 2.48. At 1 year follow-up, all improvements proved to be stable or even increased. The self-reported improvements in symptoms were corroborated by the ratings of the therapists. At the end of therapy, 77% of the patients showed clinically significant improvements and in the 1 year follow-up, this was true for 80% of the patients (Leichsenring et al., 2005; Leichsenring et al., 2008).

There have been several studies conducted in Germany that support the effectiveness of psychodynamic and psychoanalytic therapy as well as the long term benefits of the therapy. Those studies include the Heidelberg Practice Study (Rudolf et al., 2001 as cited in Leichsenring et al., 2005), the Heidelberg-Berlin Study (Grande et al., 2006), the Munchen Process Outcome Study (Huber, Klug, & von Rad, 2001 as cited in Leichsenring et al., 2005), the Frankfurt-

Hamburg Study (Brockman, Schuler, & Eckert, 2001 as cited in Leichsenring et al., 2005), the Berlin Psychotherapy Study (Rudolf, Manz, & Ori, 1994 as cited in Leichsenring et al., 2005), and the Transparency and Outcome Orientation in Outpatient Psychotherapy or TRANS-OP study (Puschner, Kraft, Kachele, & Kordy, 2007).

The Stockholm Outcome of Psychoanalysis and Psychotherapy Project (STOPP).

The Stockholm Outcome of Psychoanalysis and Psychotherapy Project (STOPP) reported the results from 407 people in various stages of public subsidized psychoanalysis or long-term psychodynamic psychotherapy (before, during and after treatment) that were followed up for a period of three years. All patients completed a questionnaire including the Symptom Checklist-90 (SCL-90), Sense of Coherence Scale (SCOS), and the Social Adjustment Scale (SAS) on three occasions within 12 month intervals. The average duration of treatment was 40 months for long-term psychodynamic therapy and 51 months for psychoanalysis (Bloomberg, Lazar, & Sandell, 2001; Sandell et al., 2000).

The study results revealed progressive improvement the longer patients were in treatment. The slopes for all three of the outcome measure indicate small to moderate effect sizes ($d = 0.4 - 0.6$) for long-term psychodynamic psychotherapy and moderate to very large effect sizes ($d = 0.4 - 1.5$) for psychoanalysis. The largest effect sizes were on the SCL-90 measuring self-reported symptom distress and the lowest effect sizes were on the SAS measuring self-rated social relations. Although measures of symptom distress and morale were stronger in those patients receiving psychoanalysis, both forms of treatment were equally weak on the measure of social relations. The study supports the effectiveness of long term psychoanalysis

and psychodynamic therapy while highlighting outcome differences based on treatment duration and session frequency (Bloomberg et al., 2001; Sandell et al., 2000).

Finland: The Helsinki Psychotherapy Study.

In the Helsinki Psychotherapy Study, 326 outpatients with mood disorders were randomly assigned to three treatment groups: long-term psychodynamic psychotherapy, short-term psychodynamic therapy, and solution-focused therapy. The patients were followed up for three years from the start of treatment. The outcome measures used for depressive symptoms were the self-report Beck Depression Inventory (BDI) and the Hamilton Depression Rating Scale (HAMD) which is an observer rated scale. To measure anxiety symptoms, the self-report Symptom Check List Anxiety Scale (SCL-90-Anx) and the observer rated Hamilton Anxiety Rating Scale (HAMA) were used (Knekt, Lindfors, Harkanen, et al., 2008).

A statistically significant reduction of symptoms was noted on all four outcome measures. Short-term psychodynamic psychotherapy was more effective than long-term psychodynamic therapy during the first year with 15-27% lower scores for the four outcome measures. At the second year follow-up, no significant differences were found between the short-term and long-term therapies. After three years of follow-up, long-term psychodynamic psychotherapy was more effective with 14-37% lower scores on all four of the outcome measures. No significant differences were found in the effectiveness of the short-term therapies. Based on the study, it was concluded that short-term therapies produce benefits more quickly than long-term psychodynamic psychotherapy. However, in the long run long-term

psychodynamic therapy proved superior to short-term therapies for patients with depressive and anxiety symptoms (Knekt, Lindfors, Harkanen, et al., 2008).

The Helsinki Psychotherapy Study Group was also interested in the effectiveness of short-term and long-term psychotherapies on work ability and functional capacity. The study sample consisted of the same 326 outpatients with depressive or anxiety disorders randomly assigned to either long-term or short-term psychodynamic therapy or short-term solution-focused psychotherapy. The patients were followed for three years from the start of treatment with outcome measures on five scales or indices related to work ability and functional capacity (Knekt, Lindfors, Laaksonen, et al., 2008).

The results were similar to the previously reported study. Work ability was significantly improved according to the outcome measures from 15 to 21% during the three year follow-up. No differences in the work ability scores were found between the two short-term therapies. The short term therapies showed 4-11% more improved work ability scores than long-term therapy at the 7 month follow-up point. During the second year of follow-up, no significant differences were found between therapies. After 3 years of follow-up, long-term therapy was more effective than the short-term therapies with 5-12% more improved scores. The study group concluded that the short-term therapies more effectively improved work ability during the first 7 months of follow-up. However, long-term therapy was more effective at the end of the 3 year follow up with no differences noted between the two short-term therapies (Knekt, Lindfors, Laaksonen, et al., 2008).

Naturalistic Design Studies

Naturalistic design studies (effectiveness studies) are carried out under the conditions of clinical practice and have a high clinical representativeness (Shadish, Matt, Navarro, & Phillips, 2000). Patients with complex or highly comorbid disorders, as they occur in clinical practice are treated. Therapists apply exactly those methods of psychotherapy that they usually apply and that they are experienced in. Patients themselves make a decision for a specific kind of therapy and for a specific psychotherapist, and the duration of the treatment is determined by clinical requirements (Seligman, 1995).

Though Random Control Trials (RCTs) may provide the basis for establishing good internal validity, they may create problems in establishing external validity. Empirical evidence from RCTs cannot be transferred directly to the conditions of the field. If a method of psychotherapy has been shown to work under laboratory conditions (efficacy studies), this does not necessarily imply that it works equally well under natural conditions (effectiveness studies). For this reason, the studies listed by the APA (Chambless & Hollon, 1998; Chambless & Ollendick, 2000) as empirical support for specific psychotherapeutic methods, in fact show that those methods work under laboratory conditions. That they work equally well in the field has not yet been demonstrated. For this purpose, naturalistic studies are required (Leichsenring, 2004).

Classic Naturalistic Studies of Long-Term Psychodynamic Psychotherapy

Early long-term naturalistic psychodynamic outcome studies did not focus as much on documenting therapeutic change, it was assumed to be effective based on numerous case studies

and a myriad of accepted research (for reviews see Fonagy, Roth, & Higgitt, 2005; Hill & Lambert, 2004; Leichsenring, 2009; Sandell, 2012;). Instead earlier studies tried to identify those factors in the therapeutic process that were curative or contributed significantly to the resulting and enduring therapeutic change utilizing standardized diagnostic or assessment instruments. Research consisted of identifying patient or therapist attributes that might be able to predict those that are most likely to benefit from therapy or conversely those that are likely to end psychotherapy prematurely (Beutler et al., 2004; Hilsenroth, Handler, Toman, & Padawer, 1995; Luborsky, Crits-Christoph, Mintz, & Auerbach, 1988; Orlinsky, Ronnestad, & Willutzki, 2004).

The Psychotherapy Research Project (PRP) of the Menninger Foundation (Kernberg, 1973).

The Psychotherapy Research Project (PRP) of the Menninger Foundation was developed during the years from 1952 to 1954. The goal of the project was to study the process and outcome of psychotherapy in 42 subjects receiving either classic psychoanalysis or psychoanalytically orientated therapy (both expressive and supportive therapy). The subjects were followed during the initial phase of treatment, throughout the natural course of treatment, and at termination of the psychotherapy with follow-up assessments between 2-3 years post-termination. The Menninger study's naturalistic design required that each patient be treated by the most clinically appropriate modality i.e., no random assignment of patients to treatment, that there be no traditional control conditions or other nonclinical research impositions, and that the therapy under study be conducted through its natural course with neither therapist nor patient being influenced by or aware of the research study. The periods of treatment ranged from 6

months to 12 years with all patients reached for formal follow-up study at the 2 to 3 year mark. More than one third of the patients could be followed-up for periods ranging from 12 to 24 years beyond their treatment terminations (Wallerstein, 1986, 1989, 2001).

The goals of the PRP study were to track improvement in long-term psychotherapies and how those changes come about as a result of psychotherapy. The objective of the study was to identify which factors interact in the patient, therapist, or the treatment itself that contribute to significant therapeutic change. The data collected included cross sectional assessments from psychiatric interviews, the administration of psychological test batteries, and social histories. There was a specific interest in the psychological change mechanisms operative within both the expressive mode of psychotherapy, the uncovering aspect of the therapy and the supportive mode of psychotherapy which is primarily focused on ego strengthening (Wallerstein, 1986, 1989, 2001).

The PRP study concluded that although the psychotherapy accomplished more stable and enduring results than expected, classic psychoanalysis achieved more limited outcomes than predicted. A great deal more change was achieved by nonintrepretive and supportive means than originally anticipated. The psychodynamic therapies with varying mixes of expressive and supportive psychotherapies tended to converge rather than diverge in therapeutic outcomes. Across the entire spectrum of treatment courses, from the most analytic-expressive to the most clearly supportive therapy, all treatments carried more supportive elements than originally projected. The study team concluded that these supportive elements accounted for substantially more of the structural or intrapsychic changes achieved than expected (Wallerstein, 1986, 1989, 2001).

The Penn Psychotherapy Project (Luborsky et al., 1980).

The Penn Psychotherapy Project (Luborsky et al., 1980) was launched in July of 1968 to study the factors that predict outcome in outpatient psychotherapy. The Penn Project collected data from 73 patients and 42 therapists throughout a 5 year period of psychodynamic psychotherapy. The goal of the study was to measure the predictability of therapeutic outcomes based on measures from the patients, therapists, and clinical observers. The patients received an intensive initial evaluation before the first session of therapy, they were intensely evaluated again at the termination of treatment, and a sample of 19 patients was reassessed 5 years later. Therapists provided information about the patients initially and provided additional information at termination. The therapists were also evaluated based on a battery of tests during the course of treatment. The psychotherapy treatments ranged from a minimum of 8 sessions to 264 sessions, with a mean of 44 sessions and a mean of 41 weeks of psychotherapy (Luborsky et al., 1980; Luborsky et al., 1988; Mintz, Luborsky, & Crits-Christoph, 1979).

Results from the Penn study are that a high percentage of the patients showed significant treatment benefits. The therapists' ratings of patient benefits were: 22% large improvement, 43% moderate improvement, 27% some improvement, 7% no change, and 1% got worse. The corresponding observers' ratings were: 5% large improvement, 51% moderate improvement, 27% some improvement, 14% no change and 3% got worse. The patients' ratings of their change were similar to the clinical observer. The study also stated that the improvement in psychological symptoms was significantly greater than for physical symptoms, although both were significantly reduced during psychotherapy. The Penn Psychotherapy study also noted that

patients tend to maintain their treatment gains after psychotherapy, although with some loss from termination levels (Luborsky et al., 1980; Luborsky et al., 1988; Mintz et al., 1979).

Another aim of the research of the Penn Psychotherapy Project was to learn what pretreatment factors or patient qualities are associated with treatment gains. The results of the predictive measures were generally insignificant, and the best predictive measures were the results in the .2 to .3 range, meaning that only 5% to 10% of the outcome variance was predicted. The Penn study concluded that prediction of outcome of psychotherapy, either by direct prediction or by predictive measures based on pretreatment or early in treatment information could be done but at best, barely significantly based on their sample. Patient characteristics made up the bulk of the basis for prediction while therapist and treatment characteristics seemed to add very little (Luborsky et al., 1980; Luborsky et al., 1988; Mintz et al., 1979).

The Riggs-Yale Project (Blatt & Ford, 1994).

Blatt and Ford (1994) utilized an object relations perspective when evaluating therapeutic change in patients receiving long term intensive psychodynamic therapy. Object relations as defined by Greenberg and Mitchell (1983) is the “Individuals interactions with external and internal (real and imagined) other people, and to the relationship between their internal and external worlds” (pp. 13-14). Blatt and Ford studied 90 hospitalized adolescents at the Austen Riggs Center who received psychodynamically informed treatment four times a week, for an mean of 15 months, in a comprehensive therapeutic milieu. The patients who manifested greater change over the course of treatment were those patients who initially were more able and/or willing to communicate disordered thinking and images of destructive and malevolent

interactions, but whom at the same time had indications of a greater capacity for interpersonal relatedness.

Blatt and Ford (1994) further reported that the diagnostic tools which assessed the patients' object relations as part of their initial psychological evaluation provided the most insight regarding those patients who would later achieve therapeutic positive change. The most impressive changes were decreased frequency and/or lessened severity of clinical symptoms, better interpersonal relationships, increased intelligence scores, decreased thought disorder, and decreased fantasies about unrealistic interpersonal relationships (Blatt & Ford, 1994). The moderator variable for psychotherapy in the Blatt and Ford study appears to be the capacity to communicate disordered thinking and disruptive experiences as well as the capacity for establishing appropriate and constructive interpersonal relations (Cook, Blatt, & Ford, 1995). This finding suggests the importance of a patient's object relations and his or her ability to communicate in relation to achieving a positive therapeutic change.

The Riggs-Yale Study (Blatt & Ford, 1994), the Menninger Study (Kernberg, 1973), and the Penn Study (Luborsky et al., 1980), all studies evaluating the effectiveness of long-term psychodynamic psychotherapy, are similar in two major areas. First, they are similar in the diagnostic tools used to measure therapeutic change such as the Rorschach Inkblot Test and the MMPI. The other similarity is in the naturalistic design of the studies in which patients who apply to the facility are given the treatment that is clinically indicated. The alternative design is to randomly assign patients to alternative treatments. But as Howard, Kopta, Krause, and Orlinski, (1986) point out, the randomized comparison design loses some patients because they will not accept the randomization and it places some patients in treatments that may be less than

suitable for them. The latter concern raises important ethical issues regarding the appropriate treatment for each patient (Seligman, 1995; Shedler, 2010; Wachtel, 2010; Westen & Bradley, 2005; Westen et al., 2004). The Yale-Riggs Study, the Menninger Study, and the Penn Study as well as many other studies in Europe, demonstrate that much can be learned from the naturalistic design of a long term psychodynamic psychotherapy study and the assessment tools used to measure therapeutic change. It is based on the results of these studies that I have elected to employ a similar Pre-Post design.

The A priori Hypotheses

It is hypothesized there will be significant improvement in patients' personality traits after 10 months or more of long term psychodynamic psychotherapy. The improvement in the personality traits will be measured by a decrease in the *T* score of the MMPI-2 Clinical Scales. The MMPI-2 self-report measure was given upon application for services at the Psychological Clinic and again after at least 10 months of psychotherapy. The data from Time 1 and Time 2 of testing of each Clinical Scale of the MMPI-2 will be analyzed using a two-tailed *t*-test (SPSS 21) and applying a Bonferroni correction.

It is hypothesized that patients' statements will reflect less Primary Process thinking as defined by Freud as "wishful" or "drive dominated" thinking (Freud, 1900/1953, 1911/1958, 1915/1957 as cited in Holt, 2005) measured by responses on the Rorschach Inkblot Test and scored using the Holt Measure of Primary Process Manifestation (Holt, 1977). It is hypothesized that patients' statements will reflect an increase in Secondary thought process which is goal oriented, governed by the rules of formal logic as well as the reality principle (Holt, 2005). The

increase in Secondary Process will be measured by responses on the Rorschach Inkblot Test and scored using the Holt Measure of Primary Process Manifestation (Holt, 1977). The Rorschach Inkblot Test was given upon application for services at the Psychological Clinic and again after at least 10 months of psychotherapy. The data from Time 1 and Time 2 of testing will be scored using the Holt Measure of Primary Process Manifestation (Holt, 1977), analyzed using a two-tailed *t*-test (SPSS 21) and applying a Bonferroni correction.

H1: It is hypothesized that there will be a decrease in the Hypochondriasis *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H2: It is hypothesized that there will be a decrease in the Depression *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H3: It is hypothesized that there will be a decrease in the Hysteria *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H4: It is hypothesized that there will be a decrease in the Psychopathic Deviate *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS

21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H5: It is hypothesized that there will be a decrease in the Paranoia *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H6: It is hypothesized that there will be a decrease in the Psychasthenia *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed-*t* test (SPSS 21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H7: It is hypothesized that there will be a decrease in the Schizophrenia *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H8: It is hypothesized that there will be a decrease in the Hypomania *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H9: It is hypothesized that there will be a decrease in the Social Introversion *T* score of the MMPI-2 from Time 1 to Time 2. The data will be analyzed using a two-tailed *t*-test (SPSS

21) to compare Time 1 scale score with Time 2 scale score, applying a Bonferroni correction ($.05/9 = .005$).

H10: It is hypothesized that there will be a decrease in the total Rorschach Inkblot Test responses that are scored as Primary Process Level 1 both Aggressive and Libidinal by the Holt Measure of Primary Process Manifestation (Holt, 1977) from Time 1 to Time 2. The Rorschach Inkblot Test responses will be scored using the Holt Measure of Primary Process Manifestation (Holt, 1977), analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 Level 1 score with Time 2 Level 1 score, applying a Bonferroni correction ($.05/2 = .025$).

H11: It is hypothesized that there will be an increase in the total Rorschach Inkblot Test responses that are scored as Primary Process Level 2 both Aggressive and Libidinal by the Holt Measure of Primary Process Manifestation (Holt, 1977) from Time 1 to Time 2. The Rorschach Inkblot Test responses will be scored using the Holt Measure of Primary Process Manifestation (Holt, 1977), analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 Level 1 score with Time 2 Level 1 score, applying a Bonferroni correction ($.05/2 = .025$).

CHAPTER II

METHOD

Procedure

Archival records over a 7 year period at a university based outpatient Psychological Clinic were reviewed for this study. This review included approximately 800 files. Patients applying for services at the clinic are given an initial psychological evaluation which includes the Rorschach Inkblot Method and the MMPI-2 as part of a standard battery of tests. However, additional psychological testing during therapy or prior to the completion of therapy is at the therapist's discretion.

Criteria for inclusion into this study were as follows: (a) Male or female at least 18 years of age, (b) Attended therapy for at least 10 consecutive months, and (c) 2 completed MMPI-2 tests , 1 given as part of the initial psychological evaluation prior to therapy at the Psychological Clinic and the 2nd MMPI-2 completed after at least 10 months of continuous therapy or any time after 10 months as per the therapist's discretion, (d) and/or 2 completed Rorschach Inkblot Tests, 1 given as part of the initial psychological evaluation prior to therapy at the Psychological Clinic and the 2nd Rorschach Inkblot Test completed after at least 10 months of continuous therapy or any time after 10 months as per the therapist's discretion.

Each file contained a signed informed consent allowing the anonymous use of the clinic record for either teaching or research purposes or both. All identifying information or information which could be used to establish an identity of the patient at the university based outpatient clinic was removed prior to analysis. The administration and scoring of all test

materials, as well as the psychotherapy for all patients, were performed by advanced graduated students enrolled in an APA (American Psychological Association) approved doctoral program in clinical psychology. All assessments and psychotherapy were supervised weekly by a psychoanalytically informed faculty member. The treatment model at the clinic is predominantly that of long term, psychodynamic, insight-oriented psychotherapy. All faculty members were licensed clinical psychologists with several years of applied clinical experience.

Assessment Measures

Minnesota Multiphasic Personality Inventory-2 (MMPI-2).

In the United States, the Minnesota Multiphasic Inventory (MMPI; Hathaway & McKinley, 1943) has been the most widely used self-report measure of adult personality and psychopathology (Lubin, Larsen, & Matarazzo, 1984). The second edition of the instrument, MMPI-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) has seen similar popularity (Butcher, Atlis, & Hahn, 2004). The MMPI-2 is a paper and pencil objective personality test consisting of 567 items which are answered either true, false or no answer. The questions deal largely with psychiatric, psychological, neurological, or physical symptoms. The individual raw scores are converted into normalized standard scores which are referred to as *T* scores.

The MMPI-2 consists of 10 Clinical Scales, 15 Content Scales, and several Special Scales for assessing specific characteristics such as alcohol abuse or marital distress. The test also contains several validity scales that were designed to assess test taking strategies that might have a negative impact on test results, such as over or under endorsement of symptoms and

inconsistent and/or random responding. Scales *L* (Lie), *K* (Defensiveness), and *F* (Infrequency) are the validity scales originally developed by Hathaway and McKinley in 1943 (Butcher et al., 2004).

The MMPI-2 Clinical Scales include Hypochondriasis (*Hs*), Depression (*D*), Hysteria (*Hy*), Psychopathic Deviate (*Pd*), Masculinity-Femininity (*Mf*), Paranoia (*Pa*), Psychasthenia (*Pt*), Schizophrenia (*Sc*), Hypomania (*Ma*), and Social Introversion (*Si*) scales. Raw scores on all MMPI-2 scales are converted into *T* scores, with a *T* score of 65 and above representing the clinical range (Butcher et al., 1989).

The test-retest reliability of the MMPI-2 basic Validity, Clinical and Content Scales range from .67 to .92 for men and .58 to .91 for women, showing high test-retest reliability (Butcher et al., 1989; Butcher et al., 2004). The *MMPI-2 Manual* (Butcher et al., 1989; Butcher et al., 2001, Appendix E) reports the reliability data for 82 men and 111 women that were retested after an average of 8.58 days. The test-retest correlations range from .54 to .93 across the 10 Clinical Scales with an average of .74 (Weiner & Greene, 2008). The internal consistency coefficient alpha for the traditional Validity Scales ranges from .62 to .74 for men and .57 to .72 for women. For the Clinical Scales, coefficient alpha ranges from .58 to .85 for men and .39 to .87 for women, except for the Masculinity-Femininity scale which is highly heterogeneous (Butcher et al., 1989; Butcher et al., 2004).

Projective Measures of Assessment

Frank (1939) first suggested understanding an individual's personality structure, "by giving him a field (objects, materials, & experiences) with relatively little structure and cultural

patterning so that the personality can project upon that plastic field his way of seeing life, his meanings, significances, patterns, and especially his feelings.” (p. 403). This projective concept was further expanded by Rapaport (1942/1967) to include the projective hypothesis and projective procedures for testing. Projective tests were later incorporated into a standard battery of tests used for psychological assessment (Rapaport, Gill, & Schafer; 1945/1968). The goal of all assessment is to understand an individual’s intrapsychic structure. Assessments utilizing projective techniques provide important insights into an individual’s personality such as their life themes and style of interaction with others (Phillips, 1992).

Projective tests are designed to allow an individual to respond in an unrestricted manner to unstructured or ambiguous objects or situations as opposed to objective tests where there are correct answers which can be given and subjective responses are not scored (Reber, 1985). Projective methods require the individual to respond based on data created from their personal experience. The projective response thus incorporates Frank’s original theory and may reflect an individual’s internal needs, emotions, thought processes, relational patterns, experiences or behavior (Hilsenroth, 2004). Examples of projective measures of assessment include the Rorschach Inkblot Test and the Thematic Apperception Test.

Holt Measure of Primary Process Manifestations

Thought organization will be evaluated by using a procedure developed by Robert Holt (1966, 1967, 1968, 1977) based on Freud’s concepts of Primary and Secondary Thought Processes (1900/1953 as cited in Holt, 2005). Psychoanalytic theory suggests that optimal interpersonal and intellectual functioning is served by the adaptive interplay between what Freud

termed Primary Process thinking and Secondary Process thinking. According to Freud, Primary Process thinking is affectively driven ideation characterized by wish fulfillment, condensation, displacement, and symbolization. The Secondary thought process is goal oriented, governed by the rules of formal logic as well as the reality principle. This latter mode of thought organization Freud referred to as Secondary Process (Freud, 1911/1958 as cited in Holt, 2005).

Holt's (1968) *Manual for the Scoring of Primary Process Manifestations in the Rorschach Responses* has been the principal method for systematically rating the level of Primary Process content in subjects' Rorschach responses. Holt developed a complex procedure for assessing the extent and nature of primitive thinking on the Rorschach and the effectiveness with which the thinking is integrated into appropriate, reality oriented responses. Holt (1977) and others have demonstrated that these variables are related to independent assessment of creative thinking and complex cognitive activity. Numerous studies utilizing this measure have linked the capacity for Primary Process integration on the Rorschach to a range of cognitive and interpersonal functions (Ackerman, Hilsenroth, Clemence, Weatherhill, & Fowler, 2000; Baity, Blais, Hilsenroth, Fowler, & Padawer, 2009; Baity & Hilsenroth, 1999; Blais, Hilsenroth, Castlebury, Fowler, & Baity, 2001; Blatt & Berman, 1984; Fowler, Hilsenroth, & Nolan, 2000; Frank, Tuber, Slade, & Garrod, 1994; Hilsenroth, Hibbard, Nash, & Handler, 1993; Lerner & Lewandowski, 1975; Patrick & Wolfe, 1983).

The Holt Measure of Primary Process Manifestations was developed to score the content of the Rorschach response for Primary Process thinking. The Primary Process content variables are divided into two major groups depending on whether the content of the implied wish is Libidinal or Aggressive. Both of these subdivisions have two sections which are designated as

Level 1 and Level 2. Utilizing a “primitive-civilized” dimension as outlined by Holt (1977), the more direct, intense, or blatant the wish, the closer the response is to the Primary Process of thinking and the score given is Level 1. Conversely, the more the expression described or implied is socialized, the more the thinking concerned is felt to be of a Secondary Process, which is scored a Level 2.

Holt’s (1977) method for scoring Primary Process manifestations on the Rorschach differentiates between two levels of aggressive content. Level 1 Aggression scores (L1) are related to Primary Process forms of primitive aggression, specifically measures of murderous or sadomasochistic aggression. Level 2 Aggression scores (L2) are related to the Secondary thought processes and specifically measure usually non-lethal forms of hostility or aggression that are expressed in a socially acceptable way. Each of these levels is divided into three aspects of aggression that include forms of attack, victims of aggression, and results of aggression. An example of Level 1 Aggression of an attack would include vivid sadistic fantasies, annihilation of a person or animals and torture. An example of Level 2 Aggression of an attack would include responses portraying explosions, fighting, fire, frightening figures, weapons or claws. An example of Aggression at Level 1 containing the victim of aggression would be extreme victimization, extreme helplessness or suicide. An example of Level 2 Aggression response containing a victim of aggression might include a person or animal that is in pain or wounded, frightened persons or animals, and figures or animals in precarious balance (Holt, 1977).

The Holt Measure of Primary Process Manifestation also differentiates between two levels of libidinal content using Rorschach responses. Libidinal Level 1 responses (L1) reflect crude direct primitive libidinal content. Libidinal Level 2 responses (L2) reflect indirect,

controlled socialized wishful libidinal content. Both Level 1 and Level 2 categories are further subdivided based on whether the libidinal content is Oral Receptive, Oral Aggressive, Anal, Sexual, Exhibitionistic, or Sexual Ambiguity. Examples of Holt's Primary Process Manifestation with libidinal content of the Level 1 Rorschach response would include content with Oral Receptive features defined as a mouth, breasts, sucking, famine or violence. Examples of a Level 2 response that contains libidinal content that is Oral Receptive would include kissing, drinking, food, or drinks. Oral Aggressive content at a Libidinal Level 1 would include responses such as teeth, jaws, cannibalism, castrative or sadistic biting and parasites. Examples of Oral Aggressive at the Libidinal Level 2 would include animals that are feared because of their biting such as crabs, alligators, sharks, or verbal aggression such as arguing (Holt, 1977).

One point is assigned for each Level 1 or Level 2 response. Scores will be calculated by totaling the number of Level 1 and Level 2 responses on each protocol. The Holt system has demonstrated high levels of test-retest (Gray, 1969) and interrater reliabilities (Holt, 2009; Lerner & Lewandowski, 1975). The use of the Holt's system has demonstrated good reliability (Baity & Hilsenroth, 1999; Fowler, Hilsenroth, & Handler (1995) and significant validity in a number of studies (Baity & Hilsenroth, 1999; Blatt & Berman, 1984; Hilsenroth et al., 1993; Holt, 2009; Murray, 1985; Russ, 1988).

Data Analysis

Each Rorschach protocol was administered and scored according to the procedures dictated by the Exner Comprehensive System (Exner, 1986, 1993, 2003). The advanced graduate students who administered the Rorschach protocol had two courses in personality

assessment in which the Exner Comprehensive System of Rorschach administration and scoring were taught as a central part of the courses. Each examiner was trained in the Exner Comprehensive System Rorschach administration and scoring procedures (Exner, 1986, 1993, 2003). No examiner was allowed to test clinic patients until the requirements for proper administration were met. Each administration was videotaped and each administration and scoring was reviewed by the supervisor, a clinical faculty member to ensure that consistently accurate administration procedures were followed. In the second clinical evaluation, the examiners administered and scored the Rorschach protocols with the patients under the same strict supervisory procedures. In addition, the Rorschach protocols were scored according to the Holt Measure of Primary Process Manifestation (Holt, 1977) by this author and another advanced graduate student, who were unaware as to the time of testing for each Rorschach protocol completed.

The MMPI-2 was administered according to standard instructions and completed individually by each subject. All MMPI-2 scores were reviewed for validity and *T* scores were calculated with the aid of computer software. There were no MMPI-2 records used in this study with *F* scores of $T > 90$. The second administration and scoring of the MMPI-2 utilized the same procedure and standards and was reviewed by the clinical faculty member supervising the case. .

The data analyzed in this study consist of the test data from the MMPI-2 and the Rorschach Inkblot Method at Time 1 of testing and at Time 2 of testing. The presence of possible confounds were investigated using the procedures recommended by Kalter and Marsden (1970) before the preplanned data analysis was performed. The number of Rorschach responses was not found to be significantly related to any of the Rorschach variables utilized in this study

($p > .05$). A sample of the 26 Rorschach protocols was used to establish interrater reliability (Shrout & Fleiss, 1979) for the Holt Measure of Primary Process Manifestation. The author and another graduate student independently and blind to the time of testing scored the protocols to obtain an Intraclass Coefficient (ICC) of .733 for the Holt Measure of Primary Process Manifestation.

The data from Time 1 of testing and Time 2 of testing for each of the 9 Clinical Scales of the MMPI-2 were analyzed using a two-tailed t -test (.05 significance level) using computer software (SPSS 21). A Bonferroni correction ($.05/9 = .005$) was applied to decrease the chance of obtaining a false-positive result or a Type I error when multiple pair wise tests are performed on a single set of data. The data from responses of the Rorschach Inkblot Test which were scored using the Holt Measure of Primary Process Manifestation (Holt, 1977) were aggregated according to Level 1 and Level 2 responses. Data from the aggregate of Level 1 and Level 2 at Time 1 of testing and Time 2 of testing were analyzed using a two-tailed t -test (.05 significance level) using computer software (SPSS 21). A Bonferroni correction ($.05/2 = .025$) was applied to decrease the chance of obtaining a false-positive result or a Type I error when multiple pair wise tests are performed on a single set of data.

CHAPTER III

RESULTS

Sample

The sample consisted of 17 files that met all of the inclusion criteria during the data collection period. The patient files represented 7 males (41%) and 10 Females (59%). The age of the sample ranged 20-44 years old ($M = 31$). The distribution of relationship status was 5 married (29%), 2 divorced (12%), and 10 single (59%). The subjects annual income was reported between 0 income and \$20,000 ($M = \$7,800$). The education level obtained ranged from 12 years of education to 18 years of education ($M = 15$) with the Full Scale IQ (Weschler, 1981) reported at a minimum of 101 and a maximum of 133 ($M = 119$). The minimum number of therapy sessions attended was 31 and the maximum sessions attended was 301 ($M = 117$). Table 1 provides detailed demographic information according to subject.

Table 2 displays the distribution of Axes I and II diagnoses per subject in accordance with the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., *DSM-IV*; American Psychiatric Association, 1994). In the sample of 17 patients, 16 (94%) were diagnosed with a Mood Disorder on Axis I (Major Depressive Disorder, Dysthymic Disorder, or Depressive Disorder Not Otherwise Specified) with all 3 clusters of Personality Disorders diagnosed on Axis II. The interrater reliability for each patient's diagnosis achieved a Kappa coefficient of 100% (Cohen, 1968). This was established based on the original clinical diagnoses which were rendered by a team consisting of an advanced clinical psychology doctoral student and a supervising licensed clinical psychologist upon completion of the clinic's intake/assessment procedure and this author. This author was blind to the original patient diagnoses and provided

an Axis I and Axis II diagnoses for each case based on a review of the original psychological assessment data. A Kappa value of 100% (Cohen, 1968) was obtained for the presence or absence of DSM-IV diagnoses on Axis I and Axis II.

Statistical Analysis

A series of paired *t*-tests, two-tailed (.05 level of significance) were conducted on the nine MMPI-2 Clinical Scale comparisons from Time 1 of testing and Time 2 of testing. After the nine MMPI-2 Clinical Scales were analyzed using SPSS 21, a Bonferroni correction ($.05/9 = .005$) was applied to reduce the probability of obtaining any false-positive results or Type I errors when multiple pair wise tests are performed on a single set of data. Paired *t*-tests, two-tailed (.05 level of significance) were conducted on the total Level 1 score (combined Level 1 Aggressive and Level 1 Libidinal scores) and the aggregate of the Level 2 scores (total of Level 2 Aggressive and Level 2 Libidinal scores) from the Holt Measure of Primary Process Manifestation from Time 1 of Testing and Time 2 of testing. After the total Level 1 and Level 2 response scores were analyzed using SPSS 21, a Bonferroni correction ($.05/2 = .025$) was applied to decrease the probability of Type I errors. Table 3 and Table 4 present the results from the paired *t*-tests, the Mean (*M*), Standard Deviation (*SD*), and the *p* value for all of the MMPI-2 Clinical Scales and the total Level 1 and Level 2 scores from the Holt Measure of Primary Process Manifestation. Results were not analyzed by gender as the sample size was limited and not generalizable.

Hypotheses

H1: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Hypochondriasis *T* score of the MMPI-2 from Time 1 to Time 2 of testing. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test reported significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale of Hypochondriasis ($p < .0002$). The result indicate a significant decrease in the mean *T* score at Time 2 of testing of the Hypochondriasis scale suggesting a decrease in somatic distress and reduced concern with illness and disease (Butcher & Perry, 2008; Graham, 1993; Greene, 1991; Groth-Marnat, 2009).

H2: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Depression *T* score of the MMPI-2 from Time 1 to Time 2. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test reported significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale of Depression ($p < .0001$). The results indicate a significant decrease in the mean *T* score at Time 2 of testing on the scale measuring Depression suggesting a decrease in depressive or sad emotions, poor morale, and lack of energy (Butcher & Perry, 2008; Graham, 1993; Greene, 1991; Groth-Marnat, 2009).

H3: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Hysteria *T* score of the MMPI-2 from Time 1 to Time 2. The data

was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test reported significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale of Hysteria ($p < .0004$). The results indicate a significant decrease in the mean *T* score at Time 2 of testing on the scale measuring Hysteria suggesting a decrease in immature, childish self-centered, extraverted, dramatic, and attention seeking behavior (Butcher & Perry, 2008; Graham, 1993; Greene, 1991; Groth-Marnat, 2009).

H4: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Psychopathic Deviate *T* score of the MMPI-2 from Time 1 to Time 2. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test did not report significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale of Psychopathic Deviate (.028). This result is interesting as the *t*-test did not demonstrate statistical significance but the scale mean at Time 2 of testing was 64. The *T* score at Time 2 of testing decreased 8 *T* points to 64 which is slightly under the 65 *T* score which designates the Clinical level of the MMPI-2.

H5: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Paranoia *T* score of the MMPI-2 from Time 1 to Time 2. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test did not indicate significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale of Paranoia ($p < .016$). Although the mean score of 58

for the scale measuring Paranoia at Time 2 of testing did not achieve statistical significance, it is well below the Clinical level of 65 designated by the MMPI-2.

H6: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Psychasthenia *T* score of the MMPI-2 from Time 1 to Time 2. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test reported significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale of Psychasthenia ($p < .0002$). The results indicate a significant decrease in the mean *T* score at Time 2 of testing on the scale measuring Psychasthenia suggesting a decrease in anxiety, ruminative self-doubts, tension, obsessional worry, and difficulty concentrating (Butcher & Perry, 2008; Graham, 1993; Greene, 1991; Groth-Marnat, 2009).

H7: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Schizophrenia *T* score of the MMPI-2 from Time 1 to Time 2. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test did not report significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale of Schizophrenia ($p < .012$). Although the results are not statistically significant, the mean scale score for Schizophrenia at Time 2 of testing is 10 *T* score points below the mean at Time 1 of testing. The *T* score mean of 62 at Time 2 of testing was not at the Clinical level of 65 for the scale measuring Schizophrenia on the MMPI-2.

H8: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Hypomania *T* score of the MMPI-2 from Time 1 to Time 2. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test do not report significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale measuring Hypomania ($p < .135$). The mean scale score at Time 1 of testing and the mean scale score at Time 2 of testing were unchanged and statistically insignificant. However, based on 94% of the subjects receiving an Axis I diagnosis of Major Depressive Disorder, Dysthymia, or Depressive Disorder Not Otherwise Specified, the insignificant result of change as measured by the Hypomania scale of the MMPI-2 confirms the absence of mania or lack of Bipolar Disorder diagnosis in the subjects.

H9: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease in the Social Introversion *T* score of the MMPI-2 from Time 1 to Time 2. The data was analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 scale score with Time 2 scale score with a Bonferroni correction applied ($.05/9 = .005$). Results of the paired *t*-test did not report significant differences at Time 2 of testing compared to the mean *T* score from Time 1 of testing on the MMPI-2 Clinical Scale measuring Social Introversion ($p < .04$). Although the results did not indicate statistical significance, the mean *T* score at Time 2 of testing had decreased 4 *T* points as compared to the mean *T* score at Time 1 of testing. The mean *T* score at Time 2 of testing of 58 is well below the Clinical level of 65 and above which measures Social Introversion on the MMPI-2.

H10: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be a decrease from Time 1 to Time 2 in the total Rorschach Inkblot Test responses that are scored as Primary Process Level 1 both Aggressive and Libidinal by the Holt Measure of Primary Process Manifestation (Holt, 1977). The Rorschach Inkblot Test responses were scored using the Holt Measure of Primary Process Manifestation, analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 Level 1 score with Time 2 Level 1 score and a Bonferroni correction applied ($.05/2 = .025$). Results of the paired *t*-test did not report significant differences at Time 2 of testing compared to the mean score from Time 1 of testing on the Holt Measure of Primary Process Manifestation (.048).

H11: It was hypothesized that as a result of Long Term Psychodynamic Psychotherapy, there will be an increase from Time 1 to Time 2 in the total Rorschach Inkblot Test responses that are scored as Primary Process Level 2 both Aggressive and Libidinal by the Holt Measure of Primary Process Manifestation (Holt, 1977). The Rorschach Inkblot Test responses were scored using the Holt Measure of Primary Process Manifestation, analyzed using a two-tailed *t*-test (SPSS 21) to compare Time 1 Level 1 score with Time 2 Level 1 score, and a Bonferroni correction applied ($.05/2 = .025$). Results of the paired *t*-test did not report significant differences at Time 2 of testing compared to the mean score from Time 1 of testing on the Holt Measure of Primary Process Manifestation (.064).

CHAPTER IV

DISCUSSION

The Minnesota Multiphasic Personality Inventory-2 (MMPI-2)

The MMPI/MMPI-2, the most widely used and validated test of psychopathology, is used to measure enduring personality traits. The MMPI/MMPI-2 scales support the belief that the maturation of personality is only achieved from years of effective treatment and that brief treatment, as defined as 20 sessions or less, does not reach the deeper levels of personality change measured by the MMPI/MMPI-2 (Gordon, 2001). It is for this reason that the MMPI-2 reacts poorly to Empirically Supported Treatments (ESTs) which typically last less than 20 sessions and is rarely used in the planning of ESTs (O'Donohue, Buchanan, & Fisher, 2000).

The results of this study confirmed the MMPI/MMPI-2 ability to measure the change in long standing personality traits as measured at the beginning of long term psychodynamic psychotherapy treatment (Time 1) and after therapy of at least 10 months duration (Time 2). Statistically significant differences were observed in four of the nine Clinical Scales studied: Hypochondriasis, Depression, Hysteria, and Psychasthenia. With the exception of the Hypomania scale which remained the same (*T* score of 48), all 8 of the remaining MMPI-2 clinical scales studied decreased and were within the normal range of functioning at Time 2 of treatment. The study results suggest an overall reduction of symptoms and psychopathology, specifically, a decrease in concerns with illness and disease as measured on the Hypochondriasis scale (*Hs*), a decrease in the feelings of hopelessness, sadness, and depressive emotions as demonstrated on the Depression scale (*D*), a decrease in the conversions of psychological conflicts into physical complaints and a reduction in the defensive denial of emotional or

interpersonal difficulties as evidenced by the decrease on the Hysteria scale (*Hy*) and a decrease in compulsions, obsessions, unreasonable fears, and excessive doubt noted on the Psychastenia clinical scale (*Pt.*) (Butcher & Perry, 2008; Graham, 1993; Greene, 1991; Groth-Marnat, 2009).

It is interesting to note that the Clinical Scales measuring Hypochondriasis, Depression, and Hysteria when elevated represent the “Neurotic Triad”. This configuration reflects a mixed neurotic pattern with depression and somatization predominating. Greene (1991) states that a “Lack of psychological insight and resistance to psychological interpretation of behavior are typical of clients with this configuration” (pp 151). However, based on the statistically significant differences from Time 1 of testing and Time 2 of testing, it would appear that those presenting with elevations on the “Neurotic Triad” achieved significant improvement in personality functioning after long term psychodynamic psychotherapy.

The results of the current study support previous research utilizing the MMPI/MMPI-2 to measure patients’ change in enduring personality traits at different times during long term psychotherapy and following the termination of therapy (Gordon, 2001; Michael et al., 2009; Monsen et al., 1995a, 1995b; Monsen, Odegard, & Melgard, 1989; Terlidou et al., 2004). In a study of 51 patients seeking treatment at a university training clinic, Michael et al. (2009) reported that particular MMPI-2 scales: Lie (*L*), Frequency (*F*), Psychopathic Deviate (*Pd*), Paranoia (*Pa*), Schizophrenia (*Sc*), and Negative Treatment Indicator (*Trt*) were most predictive of patient distress. The results suggest that clinical scales Hypochondriasis (*Hs*), Depression (*D*), and Hysteria (*Hy*) were significantly associated with actual symptom reduction over time (Michael et al., 2009).

Improved personality functioning as a result of long term psychotherapy has also been reported in long-term group therapy. Terlidou et al. (2004) reported thirty-nine outpatients in a day treatment program completed long term group psychoanalytic therapy within a 2 year time period. Paired *t*-tests were performed and statistically significant differences were observed in seven of the eight Clinical Scales studied. A decrease in Clinical Scale scores were noted in the scales measuring Hypochondriasis (*Hs*), Depression (*D*), Hysteria (*Hs*), Psychopathic Deviate (*Pd*), Paranoia (*Pa*), Psychasthenia (*Pt*), and Schizophrenia (*Sc*). In addition to the significant decrease of clinical symptomatology, improved social adaption, more controlled and better adjusted emotional expressions, and ability to establish and maintain personal relationships were observed (Terlidou et al., 2004). Terlidou et al. (2004) reports the personality changes suggest that long term group analytic treatment has an effect on psychopathological, functional, and some structural factors of personality. The duration of treatment appears to influence the structural factors of personality, which are related to the maturation of self-image and interpersonal relationships (Terlidou et al., 2004).

Gordon (2001), in a study with 55 polysymptomatic outpatients treated in Long Term Psychoanalytic Psychotherapy for a mean of 38 months reported improvement on MMPI/MMPI-2 Clinical Scales Hypochondriasis (*Hs*), Depression (*D*), Hysteria (*Hy*), Psychopathic Deviate (*Pd*), Psychasthenia (*Pt*), Schizophrenia (*Sc*), and Hypomania (*Ma*). Gordon (2001) reported all 55 outpatients' Clinical Scales decreased to a level as to be classified in the normal range within 60 months of treatment. A subsample of 18 patients with three MMPI/MMPI-2 tests, showed little change at 24.9 months with most of the scales changing significantly by 60 months of treatment. Gordon's results suggest it took patients on average approximately 2 years to begin to

make significant changes to their personalities and continued to improve in therapy for years (2001). The results of the current study support Gordon's observation of personality change beginning after 2 years. In the current study, the mean number of therapy sessions attended was 133 sessions or approximately 2.5 years of continuous weekly long term psychodynamic psychotherapy. Hence the results of the current study support Gordon's time frame for change of enduring personality traits and lend credence to the "Dose-Effect Relationship in Psychotherapy" proposed by Howard et al. (1986).

The Dose Effect Relationship in Psychotherapy

In 1986, Howard et al. proposed the "Dose-Effect Relationship in Psychotherapy" specifying the relationship between length of treatment and patient benefit (1986). The data was based on over 2,400 patients covering a period of over 30 years of research. Howard et al. (1986), provided estimates of the expected benefits of specific "doses" of psychotherapy. Their analysis indicated that by 8 sessions approximately 50% of patients are measurably improved and approximately 75% are improved by 26 sessions (Howard et al., 1986).

According to a study reported by Kopta, Howard, Lowry, and Beutler (1994), in which symptoms checklists were administered to 854 psychotherapy outpatients at the start of the study and during treatment, approximately 50% of patients with acute distress were rated as clinically significantly improved after 2 sessions of psychotherapy, 70% after 21 sessions, and 75% after 29 sessions. For patients with chronic distress, the investigators found that 50% of the patients showed clinically significant improvement after approximately 11 sessions, and 70% after approximately 50 sessions, More than 52 sessions were necessary for 75% of these patients to be rated as clinically significantly improved. For patients with characterological distress (i.e.,

personality disorders), Kopta et al. (1994) suggest that more than 52 sessions are required for approximately half of the patients to be clinically significantly improved. Kopta et al. (1994) concluded Chronic Distress symptoms demonstrated the fastest average response rate and characterological symptoms demonstrated the slowest.

Perry et al. (1999) estimated the length of treatment necessary for patients with personality disorder to no longer meet the full criteria for a personality disorder (what Kopta has classified as “recovered”). Using available data, they estimated that 50% of the patients with personality disorder would recover by 1.3 years or 92 sessions and 75% would recover by 2.2 years or 213 sessions. According to this data, patients with acute distress may benefit significantly from Short Term Psychodynamic Psychotherapy. Patients with chronic stress and personality disorders do not benefit sufficiently from short term treatments. Patients with more severe forms of personality disorder need treatments lasting 2 years or longer to benefit (Leichsenring, 2009).

Westen et al. (2004), report most Axis I conditions are comorbid with other Axis I or Axis II disorders in the range of 50% to 90%. If comorbidity is as prevalent as Westen et al. suggest, it would appear most complex mental disorders would benefit from LTPP as suggested by both of the meta-analysis by Leichsenring and Rabung (2008, 2011). The sample studied in the current research support Westen et al. (2004) assertion of the comorbidity of Axis I and Axis II diagnosis as well as the effectiveness of long term psychodynamic psychotherapy for improvement in symptoms and characterological disorders.

Holt Measure of Primary Process Manifestation

The Holt Measure of Primary Process Manifestation did not demonstrate statistical significance in comparing the means of the Rorschach responses categorized as Level 1 and Level 2 at Time 1 and Time 2 of testing. This may be due to the small sample size as the Holt Measure of Primary Process has been effective in identifying differences in previous studies with larger samples (Baity & Hilsenroth, 1999; Blatt & Berman, 1984; Fowler et al., 1995; Hilsenroth et al., 1993; Whipple & Fowler, 2011).

Bond and Perry (2004), reported defense styles became more adaptive and symptoms improved over time in patients who began psychotherapy with scores in the clinical range. Bond and Perry (2004) assessed 53 subjects approximately 6 times over a mean of 4 years of long term psychodynamic psychotherapy. Their results suggest change in patients' defense style is strongly correlated with symptomatic change (Bond & Perry, 2004). Although the current study did not use the same assessment measures as Bond and Perry (The Defense Style Questionnaire and Symptom Check List-90-R), it was hypothesized that changes as assessed by the Holt Measure of Primary Process would support personality changes evident in the MMPI-2.

Intrapsychic or Structural Change

The Holt Measure of Primary Process was developed to measure intrapsychic change in thought process i.e., Primary and Secondary thought process. It was hypothesized that all Rorschach responses categorized as Level 1 at Time 1 of testing would decrease after at least 10 months of psychodynamic psychotherapy and the Rorschach responses categorized as Level 2 at Time 1 of testing would increase at Time 2 of testing. The hypothesized decrease in Level 1 responses or Primary Process thinking and increase in Level 2 Secondary Process would provide

insight as to the intrapsychic changes responsible for the enduring benefits of long term psychodynamic psychotherapy. Although the changes in the Holt Measure did not yield statistically significant results, there is a trend towards significance which may be indicative of structural or intrapsychic changes. Clearly further research with a larger sample size is necessary to test this hypothesis.

Efforts to identify and understand the mechanisms of change as a result of long term treatment have renewed interest especially in light of rising health care costs (Berghout, Zvalink, & Hakkaart-Van Roijen, 2010; Beutel, Rasting, Stuhr, Ruger, & Leuzinger-Bohleber, 2004; de Maat et al., 2007; Gabbard, Lazar, Hornberger, & Spiegel, 1997; Werbart, Levin, Anderson, & Sandell, 2013). Intrapsychic or structural change and the continuing benefits of long term psychodynamic psychotherapy have been noted by many researchers and studied extensively (Abbass et al., 2006; Anderson & Lambert, 1995; de Maat et al., 2009; de Maat et al., 2013; Leichsenring & Rabung, 2008, 2011; Leichsenring et al., 2004, Shedler, 2010; Town et al., 2012).

Intrapsychic mechanisms of change and the continuing benefits of long term Psychodynamic psychotherapy have been explored as a predictor of long term follow-up outcome (Grande et al., 2009, Grande, Keller, & Rudolf, 2012), in Attachment Patterns (Levy, Meehan, et al., 2006), as a function of Transference Focused Psychotherapy (Clarkin & Levy 2006; Levy, Clarkin, et al., 2006), in Mentalization Based Treatment (Fonagy & Bateman, 2006), in Reflective Functioning (Gullestad & Wilberg, 2011), as Self Analysis (Falkenstrom, Grant, Broberg, & Sandell, 2007), and Mental Representations (Blatt & Auerbach, 2003; Blatt, Zuroff, Hawley, & Auerbach, 2008). Unfortunately the Holt Measure of Primary Process was unable to

support any of the existing research nor provide any insight into the enduring benefits of long term psychodynamic psychotherapy.

Limitations of the Study

The current study was completed at a university based Psychological Clinic. Although the therapy was conducted by doctoral candidates in an APA (American Psychological Association) approved Clinical Program and the therapists were supervised weekly by licensed Clinical Psychologists, all of the therapists participating in the study were of varying skill levels. Another limitation of the study was the lack of a control group to demonstrate causation. Without a control group of a matched sample, it cannot be reported that participation in long term psychodynamic psychotherapy caused personality changes. The research supports the effectiveness of long term psychodynamic psychotherapy but a causal effect has not been established. As stated by Blatt and Zuroff, (2005), Seligman, (1995), Wachtel, (2010), and Westen et al., (2004), a matched control group for an extended length of time is not only cost prohibitive but unethical according to treatment guidelines. Also, the research utilized a Naturalistic Design rather than a Randomized Control Trial which is the “gold standard” of Empirically Supported Treatments or Empirically Validated Treatments. Another limitation of the current study which was noted earlier is the small sample size. Given a sample size of 17 subjects, it is difficult to obtain any statistical power or provide further analysis of the data.

The use of the MMPI-2 to measure change as a result of long term psychodynamic psychotherapy presented limitations in the use of the assessment instrument. The MMPI-2 scales have numerous items which overlap and contribute to the intercorrelation of the Clinical Scales.

The use of the Bonferroni correction provided a conservative interpretation of the results as well as reduced the probability of a Type I error.

Future Research

The current study has provoked a number of interesting concepts to be explored in further research. The current research asserting the effectiveness of long term psychodynamic psychotherapy is compelling and highlights a number of issues and opportunities. In addition to attempting to meet the requirements of Empirically Validated Treatments or Empirically Supported Treatments by incorporating Randomized Control Trials or Manualized Treatments where and when appropriate, future research should focus more on post therapy assessment. Additional research detailing the mechanisms of change and what factors contribute to the enduring benefits of long term psychodynamic psychotherapy would not only solidify its effectiveness as a treatment for complex mental disorders but position long term psychodynamic psychotherapy as a superior and cost effective treatment among mental health treatments. The current research as well as the previous research cited, support the effectiveness of long term psychodynamic psychotherapy and its' success in facilitating personality change.

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APPENDIX

Table 1

Demographic of Sample

Subject	Age	Ed/yrs.	Income	FSIQ	#Therapy Sessions
S1 Female	30	16	6,000	116	157
S2 Female	38	14	18,000	119	112
S3 Female	20	14	6,000	129	56
S4 Male	32	16	20,000	133	224
S5 Male	30	14	0	126	301
S6 Female	29	16	6,000	---	94
S7 Male	44	17	---	130	93
S8 Male	35	18	7,000	105	114
S9 Female	34	14	4,500	111	130
S10 Male	20	12	---	101	41
S11 Male	41	18	0	---	166
S12 Female	40	16	13,000	---	170

Table 1. Continued.

Subject	Age	Ed/yrs.	Income	FSIQ	#Therapy Sessions
S13 Female	28	16	12,000	125	124
S14 Female	28	16	9,000	111	31
S15 Female	30	16	16,000	---	48
S16 Male	28	16	10,000	---	60
S17 Female	20	15	5,000	129	74
Mean	31	15	7,800	119	133
Minimum	20	12	0	101	31
Maximum	44	18	20,000	133	301

Note. Data not reported represented by ---; Ed/yrs. = number of years of education; FSIQ = Wechsler Full Scale Intelligence Quotient; #Therapy Sessions = Number of Therapy Sessions Attended.

Table 2

Subjects' DSM-IV Diagnosis

Subject	Axis I Diagnosis	Axis II Diagnosis
S1 Female	Bulimia Nervosa	Borderline Personality Disorder
S2 Female	Dysthymic Disorder	Borderline Personality Disorder
S3 Female	Dysthymic Disorder	Diagnosis Deferred on Axis II
S4 Male	Dysthymic Disorder	Personality Disorder Not Otherwise
	Panic Disorder w/Agoraphobia	w/Narcissistic & Paranoid Features
S5 Male	Identity Disorder	Personality Disorder Not Otherwise
	Dysthymic Disorder	w/Narcissistic, Borderline, &
	Psychological Factors Affecting	Avoidant Features
	Physical Conditions	
S6 Female	Depressive Disorder Not	Personality Disorder Not Otherwise
	Otherwise Specified	w/Narcissistic & Paranoid Features
S7 Male	Dysthymic Disorder	Diagnosis Deferred on Axis II

Table 2. Continued.

Subject	Axis I Diagnosis	Axis II Diagnosis
S8 Male	Depressive Disorder Not Otherwise Specified	Diagnosis Deferred on Axis II
S9 Female	Major Depressive Disorder w/out Psychotic Features	Personality Disorder Not Otherwise Specified w/ Narcissistic Features
S10 Male	Major Depressive Disorder	Personality Disorder Not Otherwise Specified with Narcissistic Features
S11 Male	Dysthymic Disorder	Passive-Aggressive Personality Disorder
S12 Female	Major Depressive Disorder	Diagnosis Deferred on Axis II
S13 Female	Major Depressive Disorder	Diagnosis Deferred on Axis II
S14 Female	Dysthymic Disorder	Histrionic Personality Disorder
S15 Female	Dysthymic Disorder	Personality Disorder Not Otherwise Specified w/Histrionic & Dependent

Table 2. Continued.

Subject	Axis I Diagnosis	Axis II Diagnosis
		Features
S16 Male	Major Depressive Disorder	Personality Disorder Not Otherwise Specified w/Narcissistic, Paranoid, & Obsessive-Compulsive Features
S17 Female	Dysthymic Disorder	Personality Disorder Not Otherwise Specified w/Avoidant & Narcissistic Features

Note. *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., 1994). Washington, D.C: American Psychiatric Association.

Table 3

Change in MMPI-2 Scores: Time 1 vs. Time 2 in Psychotherapy

Scale	Initial Evaluation (T1)		Follow-up Evaluation (T2)		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>p</i> values
Hypochondriasis (<i>Hs</i>)	64	8.3	52	10.2	.0002*
Depression (<i>D</i>)	76	8.8	58	10.6	.0001*
Hysteria (<i>Hy</i>)	68	14.3	55	9.8	.0004*
Psychopathic Deviate (<i>Pd</i>)	72	12.9	64	8.8	.028
Paranoia (<i>Pa</i>)	68	9.7	58	9.6	.016
Psychasthenia (<i>Pt</i>)	79	10.3	63	10.3	.0002*
Schizophrenia (<i>Sc</i>)	72	10.9	62	10.5	.012
Hypomania (<i>Ma</i>)	48	6.5	48	9.3	.135

Table 3. Continued.

Scale	Initial Evaluation (T1)		Follow-up Evaluation (T2)		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>p</i> values
Social Introversion (<i>Si</i>)	62	8.8	58	11.9	.04

Note. N=14. * $p < 0.005$, two-tailed.

Table 4

Change in Holt Measure of Primary Process Manifestation: Time 1 vs. Time 2 in Psychotherapy

Scale	Initial Evaluation (T1)		Follow-up Evaluation (T2)		<i>p</i> value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Total Holt Level 1 (Libidinal & Aggressive)	1.0	.913	.46	.967	.048
Total Holt Level 2 (Libidinal & Aggressive)	9.6	5.11	13.2	4.76	.064

Note. N=13. * $p < .025$, two-tailed.

VITA

Karen M. Toman was born in a sea side town in New Jersey to the parents of Thomas and Florence Toman. She has 1 brother that is 4 years younger. She attended grade school and High School in Ocean County, New Jersey. After graduating High School, Karen attended Keene State College in New Hampshire for 2 years and transferred to Fairleigh Dickinson University in Rutherford, New Jersey. Karen graduated with a Bachelor of Science degree in Marketing and a degree in Business Administration. She was employed as a sales representative for Xerox Corporation for two years. Karen received her Master in Business Administration from Fairleigh Dickinson University in Rutherford, New Jersey. Karen was employed by AT&T for 13 years in various positions including marketing, mergers & acquisitions, international product management, and as an assistant to the Chief Technical Officer. During that time, Karen was involved in many community activities working with disabled children and horses, volunteering at a hospital for traumatized children, and at the ASPCA in New York City. Karen received a Masters in Clinical Psychology from Fairleigh Dickinson University in Madison, New Jersey. She is continuing her education at the University of Tennessee with a Doctorate degree in Clinical Psychology.